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February 25, 2016

Ms. Patricia Simmons Pierre
Remedial Project Manager (RPM)
United States Environmental Protection Agency (USEPA)
Region 2
290 Broadway FL19
New York, NY 10007-1866

Subject: Dayco Corporation/L. E. Carpenter Superfund Site
USEPA ID No. NJD002168748
Response to USEPA Comments on the Work Plan for Ecological Evaluation of the Eastern Drainage Ditch and Rockaway River

Dear Patricia:

In this correspondence, TRC Environmental Corporation (TRC), on behalf of L.E. Carpenter & Company (LEC), is providing written responses to Comments issued by USEPA on January 26, 2016 regarding the Work Plan for Ecological Evaluation of the Eastern Drainage Ditch and Rockaway River dated December 10, 2015.

This correspondence also transmits, for your review and approval, a Revised Work Plan for Ecological Evaluation of the Eastern Drainage Ditch and Rockaway River which incorporates the above referenced responses.

Please feel free to contact me with any questions or comments.

Sincerely,

TRC Environmental Corporation

Karen C. Saucier, Ph.D.
Project Coordinator

Attachments

cc: Anthony Cinque, NJDEP
Ernie Schaub, L.E. Carpenter

Attachment 1
Response to USEPA Comments

EPA and NJDEP Comments
Work Plan for Ecological Evaluation of the Eastern Drainage Ditch and Rockaway River
Dayco Corporation/LE Carpenter Superfund Site, Borough of Wharton, New Jersey
Dated December 10, 2015

1. ***Proposed sampling locations along transects in both the Rockaway River and Eastern Drainage Ditch must include locations where the highest contaminant concentrations were previously detected.***

   Response: As stated in the Work Plan, we propose to sample the river at 13 transects. We believe this will provide representative surface water and sediment data upstream of, adjacent to and downstream from the Dayco Corporation/L.E. Carpenter Superfund Site ("Site"). Transects F, G and H are in the vicinity of pore water and surface water DEHP detections. Transect I is in the vicinity of the highest xylene and ethylbenzene surface water detections (and near a presumed groundwater discharge area). The Work Plan has been revised to more clearly reflect the rationale for the transect locations.

Eastern Drainage Ditch

2. ***The work plan indicates that a desktop review will be conducted to determine if an ecological evaluation is necessary for the Eastern Drainage Ditch. The Eastern Drainage Ditch borders a wetland that is located adjacent to the Rockaway River and should offer habitat to a variety of ecological receptors. It is the Agencies' position that the Eastern Drainage Ditch meets the criteria of and functions as an Environmentally Sensitive Natural Resource (ESNR), as spelled out in NJDEP's Ecological Evaluation Technical Guidance (EETG). Therefore, the work plan must be revised to include an ecological investigation of the Eastern Drainage Ditch.***

   Response: While we reserve the right to review and further challenge the status of the Eastern Drainage Ditch as an Environmentally Sensitive Natural Resource, we have revised the Work Plan to include an ecological evaluation of the Eastern Drainage Ditch.

3. ***It has been historically understood that the Eastern Drainage Ditch receives significant direct groundwater discharge. Further justification must be provided to support the conclusion that the Eastern Drainage Ditch is mostly comprised of storm water, and that upstream storm water samples from urban and industrial areas would be more reflective of background conditions in the ditch.***

   Response: While we agree that the Eastern drainage Ditch is in contact with and receives groundwater, we do not agree that the Eastern Drainage Ditch receives 'significant' direct groundwater discharge. Based on our understanding of Site

conditions, we believe that surface water runoff from upstream areas is the primary source of water in this feature.

It is our understanding that the Eastern Drainage Ditch was excavated for stormwater management when an adjacent parcel was developed in the late 1960s. We estimate, based on our review of aerial images and topographic maps, that the drainage area for the Eastern Drainage Ditch encompasses approximately 78 acres. This drainage area includes several properties zoned as industrial or commercial, including a motor vehicle body shop and scrap yard located at 117 East Dewey Avenue, and a number of NJDEP Site Remediation Profile listed sites.

We have added to the Work Plan a hydrological assessment of the Eastern Drainage Ditch that will evaluate surface water runoff and groundwater flux to assess relative contributions of each to the Eastern Drainage Ditch. Surface water runoff will be assessed by delineating the drainage area and using an appropriate urban watershed hydrological model to calculate runoff rates. Groundwater contributions from the Site and the adjacent areas will be estimated using available groundwater flow information.

4. ***Additional information on upstream surface water sampling locations and their relationship to the Eastern Drainage Ditch is required. Further, upstream (background) samples must be cotemporally collected with samples collected in the Eastern Drainage Ditch and the Rockaway River.***

A table presenting proposed upstream sampling locations for the Eastern Drainage Ditch has been added to the Work Plan. Actual locations will be determined during the sampling event, based on site accessibility. The Work Plan has been revised to state that background samples for the Eastern Drainage Ditch will be collected in concert with surface water samples collected from the Eastern Drainage Ditch.

Rockaway River

5. ***It is critical that representative sediment pore water samples be collected in order to accurately evaluate potential impacts of groundwater discharges to surface water bodies. There were some difficulties while collecting previous pore water samples adjacent to the Rockaway River. Information should be provided regarding whether there are any resolutions to the previous sampling issues. If former sampling locations cannot be resampled, then new, adjacent locations must be sampled.***

The Rockaway River adjacent to the Site is fast flowing, rocky-bottomed stream. Areas of sediment deposition are small and spottily distributed. Even the river banks are mostly rocky with small areas of sediment deposition in slack-water coves. Grain-size is also unevenly distributed. Fine-grained silts and clays are the predominant sediment types near shore; whereas sediments deposited in the channels typically are

coarse-grained sands. In all cases, sediment deposits are mostly shallow (less than 12' deep) and underlain by rocky substrates.

It is critical in the collection of a representative sediment pore water sample to avoid surface water intrusion. To that end, sediment pore water sampling is best conducted in and most suitable for fine-grained sediment environments (USEPA, 2013). Previous attempts to collect sediment pore water have been complicated by the rocky subsurface in the area of interest, which: 1) impedes pore water sampler installation; and 2) prohibits obtaining a good surface seal during installation, which allows for downhole migration of surface water.

USEPA (2013) recommends placing a flexible membrane around the pore water sampler during installation to form a seal around the sampler as it is inserted into underlying sediment. The substrate in the area of interest is uneven, making the use of a flexible membrane protective seal during installation ineffective. The combination of the rocky substrate and force required to install the pore water samplers prevented obtaining a good seal at a pore water sampler during installation.

Due to the rocky substrate in the study area, TRC installed ¾" diameter, stainless steel temporary well points with shielded drive points for pore water sampling. Driving these points through the substrate required substantial effort, such that some of the well points were bent during the installation process. After installation attempts, we found it difficult to retract the protective shield from some of the samplers.

Finally, we also found it difficult to obtain sufficient sample volume in some of the samplers. This could be due to fine-grained silts plugging the sampler screens, damage during installation, or inability to completely retract the protective shield.

TRC will attempt to collect samples from the pore water samplers installed in 2014. Samplers will be purged and, if sufficient volume is available, filtered and unfiltered pore water samples will be collected. However, *in lieu* of installing additional sediment pore water samplers, TRC proposes to attempt to work flexible tubing through interstices in the rocky, river bottom to a depth of 6 to 12 inches, and withdraw water from this zone. We will attempt to collect both filtered and unfiltered samples.

6. ***The use of Washington Pond (lentic habitat) as a background location (e.g., Transect C) for the Rockaway River (lotic habitat) is less than optimal. As detailed in NJDEP's EETG, whenever possible, similar habitat must be selected for background determinations. Further information should be provided to discuss this issue.***

As stated in the response to Comment 1, we have proposed establishing 13 transects along the Rockaway River. Three of the proposed transects, A through C, are located upstream from the Site. Transects A and B will be located in lotic habitats similar to conditions found in the River adjacent to the Site. Transect A is near the location of a

1992 sampling location as documented in a report prepared by Roy F. Weston, Inc. We believe that it is also appropriate to sample Washington Pond because it is immediately upstream from the Site, and is representative of surface water in the Rockaway River as it flows adjacent to the Site.

Attachment 2
Revised Work Plan for Ecological Evaluation

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Work Plan for Ecological Evaluation

To:	Ms. Patricia Simmons-Pierre, Remedial Project Manager United States Environmental Protection Agency (USEPA)
From:	Karen C. Saucier, Ph.D. TRC Project Coordinator
Subject:	Work Plan for Ecological Evaluation of the Eastern Drainage Ditch and Rockaway River; Dayco Corporation/L.E. Carpenter Superfund Site (NJD002168748)
Date:	December 10, 2015, Revised February 25, 2016
CC:	Mr. Anthony Cinque New Jersey Department of Environmental Protection [NJDEP] Case Manager Mr. Ernie Schaub L.E. Carpenter Project Manager
Project No.:	248642.0.0, Phase 00002

This technical memorandum presents TRC Environmental Corporation's (TRC) proposed Work Plan for conducting an ecological evaluation of the Eastern Drainage Ditch and the Rockaway River, both of which are adjacent to the Dayco Corporation/L.E. Carpenter (LEC) Superfund Site (Site) in Wharton, New Jersey. Consistent with NJDEP's February 2015 *Ecological Evaluation Technical Guidance* (EETG), the purpose of conducting an ecological evaluation is to assess actual or potential adverse ecological effects from site related constituents to environmentally sensitive natural resources (ESNRs). The ecological evaluation is used to determine either the need to conduct an ecological risk assessment or that no additional ecological evaluation is required.

Background

TRC, on the behalf of L.E. Carpenter, has been investigating the nature and extent of diethylhexyl phthalate (DEHP) in soil, groundwater, pore water and surface water on and adjacent to the Site. In the *2nd Semiannual Monitoring Report 2014* for the Site, TRC stated that migration of DEHP from the Site to the Rockaway River is not a concern. TRC's opinion was based on the use of phytoremediation to control DEHP migration, as well as extensive sampling that has shown a small number of surface water samples in which DEHP has been detected (4 out of 35), low concentrations of DEHP detected in pore water collected adjacent to the Rockaway River, and infrequent and low concentrations of DEHP in Rockaway River sediments.

USEPA and NJDEP commented that this conclusion may be premature due to detections of DEHP in both pore water and surface water above the Site-specific, background-based, New

Jersey Surface Water Quality Standard (NJSWQS) of 0.95 µg/L. In the same comment, the agencies also requested an ecological evaluation of the Eastern Drainage Ditch due to detections of DEHP in sediment and surface water samples.

The Eastern Drainage Ditch is a man-made feature that appears to have been constructed to convey water from the adjoining Air Products and Chemicals, Incorporated (APCI) site. Aerial photographs show this ditch to be a semi-circular feature that borders the APCI site on the west, south and east. The Eastern Drainage Ditch appears to be connected to the Rockaway River by a northwest to southeast trending drainage feature.

This Work Plan presents the methodology that will be used to address the agencies' September 16, 2015, comments requesting an ecological evaluation of the Eastern Drainage Ditch and additional investigations of surface water, pore water and sediment in the Rockaway River.

Eastern Drainage Ditch

As noted in the Response to Comments which accompany this revised Work Plan, we reserve the right to review and further challenge the status of the Eastern Drainage Ditch as an Environmentally Sensitive Natural Resource. However, this work plan does include collection of additional data to support an ecological evaluation of the Eastern Drainage Ditch, including the collection of background surface water and sediment samples. TRC's proposed data collection in support of an ecological evaluation for the Eastern Drainage Ditch includes the following tasks:

Assess Background Water and Sediment Quality Conditions

Historically, DEHP intermittently detected in surface water samples had been compared to a background value derived from an upstream Rockaway River station. Given that the Eastern Drainage Ditch is predominantly comprised of storm water, a separate background level that is reflective of upstream storm water contributions from urban, industrial, and commercial development is appropriate.

Based on a review of general topography and aerial photographs, TRC estimates that the drainage area for the Eastern Drainage Ditch encompasses approximately 78 acres. This drainage area includes several properties zoned as industrial or commercial, including a motor vehicle body shop and scrap yard located at 117 East Dewey Avenue, and a number of sites on the NJDEP Site Remediation Profile (SRP) database that are located upgradient from the L.E. Carpenter site . TRC proposes to assess background water

quality conditions by collecting surface water samples from four locations, as presented on Table 1 and depicted on Figure 1.

Prior groundwater, soil, sediment and surface water sampling have determined that DEHP, ethyl-benzene and xylene are Constituents of Potential Ecological Concern (COPECs) for the LEC Site. Filtered and unfiltered samples will be collected from each location and analyzed for DEHP and other COPECs (namely ethylbenzene and xylenes).

Table 1
Eastern Drainage Ditch Background Surface Water and Sediment Sampling Locations and Rationale

SAMPLING LOCATION	DESCRIPTION	PURPOSE
EDD-SW-B1	East of the end of Ross Street. According to a 1992 study (Weston, 1992) this area receives runoff from Ross Street and the former Dayco/LE Carpenter Site	Provide Eastern Drainage Ditch surface water and sediment background data upstream from the Site.
EDD-SW-B2	South of the NJDEP SRP listed Rongene Mold and Plastics Corporation Site and upstream from the Eastern Drainage Ditch	Provide Eastern Drainage Ditch surface water and sediment background data upstream from the Site.
EDD-SW-B3	South of East Dewey Avenue, near the upper end of the eastern arm of the Eastern Drainage Ditch and downstream from an existing motor vehicle body shop (not in the NJDEP SRP database) and East Dewey Avenue.	Provide Eastern Drainage Ditch surface water and sediment background data upstream from the Site
EDD-SW-B4	North of East Dewey Avenue, along the former Central Railroad of New Jersey railroad line and downstream from two NJDEP SRP listed known contaminant sites (Wharton Exxon and Sussex Morris Wholesale Supply).	Provide Eastern Drainage Ditch surface water and sediment background data upstream from the Site

TRC also proposes to evaluate hydrology of the Eastern Drainage Ditch by evaluating surface water discharges from upstream sources and potential for groundwater discharges from the surrounding area.

Evaluate Surface Water and Sediment

TRC currently collects surface water on a quarterly basis from five Eastern Drainage Ditch sample locations, SW-D-1, SW-D-2, SW-D-3, SW-D-4, and SW-D-5. These samples are analyzed for DEHP and BTEX. TRC proposes to collect sediment samples from the Eastern Drainage Ditch at these five locations for analysis of DEHP and grain size. In addition, we propose to collect and analyze surface water and sediment from one

additional location on the eastern arm of the Eastern Drainage Ditch (SW-D-6). Surface water from this location will be analyzed for DEHP and BTEX, and sediment will be analyzed for DEHP and grain size. Proposed sediment samples will be collected from the upper 12 inches. These Eastern Drainage Ditch sample locations are depicted on the attached figure.

Evaluate Biological Receptors

TRC will conduct benthic macroinvertebrate and fish surveys of the Eastern Drainage Ditch by population sampling at three locations, SW-D-3, SW-D-4, and SW-D-6. A freshwater benthic macroinvertebrate community survey of the three locations will be conducted using the methodology described in the most recent edition of the NJDEP Water and Monitoring Standards Program's *Standard Operating Procedures, Ambient Biological Monitoring Using Benthic Macroinvertebrates, Field, Lab and Assessment Methods*. The benthic macroinvertebrate biological condition at each sampling location will be assessed using the Coastal Plain Macroinvertebrate Index, which is appropriate to the low-gradient streams such as Eastern Drainage Ditch.

Fish populations will be surveyed using a seining method appropriate to the physical conditions at the sampling location.

During the sampling event, observations will be collected of potential avian, amphibian and reptilian receptors in the Eastern Drainage Ditch, if present.

Rockaway River

In their September 16, 2015 comments, NJDEP and USEPA requested an additional evaluation of DEHP in Rockaway River pore water, surface water, and sediment.

In 1992, Roy F. Weston, Inc. (Weston) conducted an ecological assessment of sediments in the Rockaway River (*Rockaway River Sediment Ecological Assessment L.E. Carpenter and Co. Wharton, New Jersey Site*). This assessment examined the benthic community and abiotic factors at six locations on the Rockaway River in the environs of the Site, two upstream reference locations, two locations adjacent to the Site, and two locations downstream from the Site. The study concluded that resource type and availability were the predominant contributors to observed variations in the benthic macroinvertebrate community in the study area, and that evidence of adverse ecological effects due to releases of COPECs from the Site was not observed. NJDEP and USEPA concurred with the findings of the Weston study in a 1993 letter to L.E. Carpenter.

Since the 1992 Weston study was conducted, L.E. Carpenter has completed substantial source removal and remedial actions at the Site. These actions have resulted in significant reductions in on-site COPEC concentrations, which translates into significant reductions in COPECs available for migration pathways, and thus, further bolsters the findings of the 1992 Weston study.

In consideration of the 1992 Weston study and to address the agencies' interest in the Rockaway River, TRC proposes to conduct additional surface water and sediment sampling to further refine our understanding of DEHP distribution and potential for ecological impacts in the Rockaway River.

Pore Water

TRC installed 11 pore water sampling points in 2013 adjacent to the Rockaway River. At least two of the 11 samplers installed adjacent to the Rockaway River in 2013 did not yield sufficient pore water during previous sampling attempts for the analytical program.

TRC will inspect the pore water sampling points, purge the locations, and attempt to collect samples from the pore water sampling points. If sufficient pore water volumes are obtained, filtered and unfiltered aliquots from each sample location will be analyzed for DEHP. One duplicate sample and one field blank sample will be analyzed for DEHP.

In addition, TRC will attempt to collect pore water samples from riverine locations with a rocky substrate by extending flexible tubing to a depth of 6 to 12 inches below the substrate surface and then withdrawing filtered and unfiltered water samples from this zone. TRC will mark use a global positioning system satellite receiver to locate these sampling points and attempt to mark them in the field so they can bed resampled if appropriate.

Sediment and Surface Water

Co-located sediment and surface water samples will be collected from transects on the Rockaway River as denoted on Table 1. Six of the proposed transects will be co-located with routine quarterly surface water sampling stations. The remaining seven transects will be positioned upstream and downstream of routinely sampled surface water locations. Figure 1 depicts approximate locations of the proposed transect locations (note that the off-map sample and transect locations are shown on the figure insets).

With the exception of Transect C (Washington Pond), TRC will collect sediment and surface water samples from the left and right banks, and from one to three mid-channel locations. Due to the patchy nature of sediment depositions in the channel of the Rockaway River, exact mid-channel sampling locations will be determined in the field. Sampling will proceed from downstream to upstream, and from left descending bank to right descending bank.

Table 2
Rockaway River Sediment Sampling Locations and Rationale

TRANSECT LOCATION (UPSTREAM TO DOWNSTREAM)	DESCRIPTION	PURPOSE
A	Downstream from the West Central Avenue Bridge in a rocky-bottomed lentic habitat. This site is in the vicinity of a sampling location of a prior benthic study (Weston, 1992).	Provide background data upstream from the Site.
B	North of Borough of Wharton property on Oxford Drive immediately upstream from Washington Pond in a lentic, rocky bottomed habitat.	Provide background data upstream from the Site.
C	Washington Pond upstream from the dam. This transect corresponds to quarterly sampling location RW-5.	Provide background data upstream from the Site
D	Approximately 170' downstream from the North Main Street bridge. This transect corresponds to quarterly sampling location RW-6. This is a rocky-bottomed, lentic habitat in the vicinity of a sampling location of a prior benthic investigation (Weston, 1992)	Provide background data upstream from the Site
E	Approximately 400' downstream from Location 6, and adjacent to the Site.	Assess DEHP distribution in surface water and sediment (where available) in an area where DEHP has been sporadically detected in surface water.
F	Approximately 100' downstream from Location 11. This transect corresponds to quarterly sampling location RW-5.	Assess DEHP distribution in surface water and sediment (where available) in an area where DEHP has been sporadically detected in surface water.
G	Approximately 100' downstream from Location 4. This transect corresponds to quarterly sampling location RW-3.	Assess DEHP distribution in surface water and sediment (where available) in an area where DEHP has been sporadically detected in surface water.
H	Approximately 100' downstream from Location 3. This transect corresponds to quarterly sampling location RW-2.	Assess DEHP distribution in surface water and sediment (where available) in an area where DEHP has been sporadically detected in surface water.

Table 2
Rockaway River Sediment Sampling Locations and Rationale

TRANSECT LOCATION (UPSTREAM TO DOWNSTREAM)	DESCRIPTION	PURPOSE
I	Approximately 100' downstream from Location 2. This transect corresponds to quarterly sampling location RW-1.	Assess DEHP distribution in surface water and sediment (where available) in an area where DEHP and ethyl-benzene have been sporadically detected in surface water.
J	Approximately 250' upstream from the confluence of the Rockaway River and an unnamed tributary into which the Eastern Drainage Ditch discharges.	Assess DEHP distribution in surface water and sediment (where available) in an area where ethyl-benzene has been sporadically detected in surface water.
K	Approximately 100' upstream from the confluence of the Rockaway River and an unnamed tributary into which the Eastern Drainage Ditch discharges.	Assess DEHP distribution in surface water and sediment (where available) in an area where ethyl-benzene has been sporadically detected in surface water.
L	Immediately downstream from the confluence of the Rockaway River and an unnamed tributary into which the Eastern Drainage Ditch discharges.	Assess DEHP distribution in surface water and sediment (where available) downstream from an unnamed tributary to the Rockaway River that conveys discharges from the Eastern Drainage Ditch.
M	Approximately 200 feet downstream from the confluence of the Rockaway River and an unnamed tributary into which the Eastern Drainage Ditch discharges.	Assess DEHP distribution in surface water and sediment (where available) downstream from an unnamed tributary to the Rockaway River that conveys discharges from the Eastern Drainage Ditch.

At Transect C, Washington Pond, sediment and surface water samples will be collected only from near-shore locations.

Collection of sediment samples will follow protocols described in the October 21, 2014 revised Supplemental Wetland Area Sampling Work Plan and will be submitted for DEHP analysis. Collection and analysis of unfiltered and filtered surface water samples will be performed in accordance with the approved Field Sampling Procedures Manual and submitted for DEHP analysis.

Additional Rockaway River Ecological Evaluation

Based on an evaluation of the nature and extent of DEHP in the Rockaway River media, TRC may conclude that a supplemental ecological evaluation that may include laboratory-based toxicity testing for sediments is an appropriate next step.

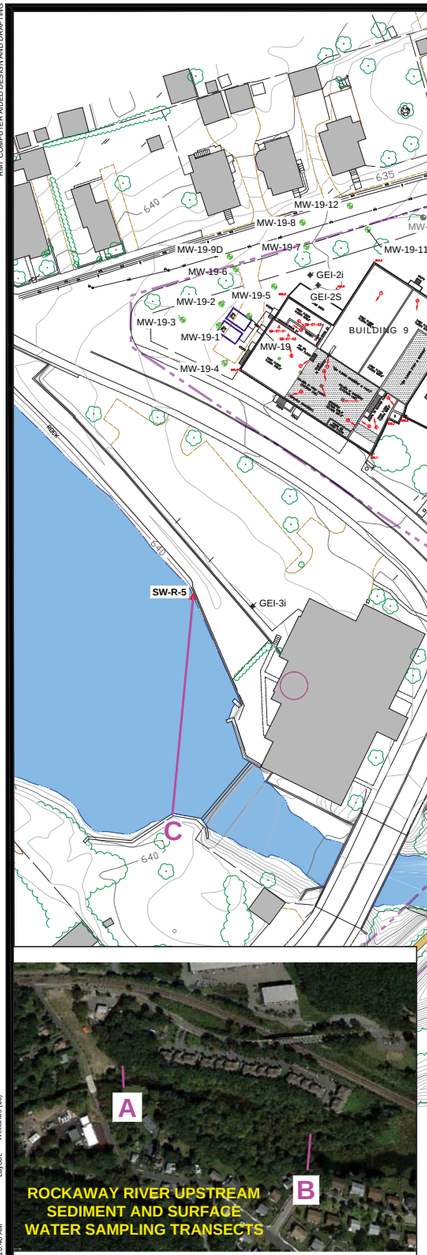
Schedule and Reporting

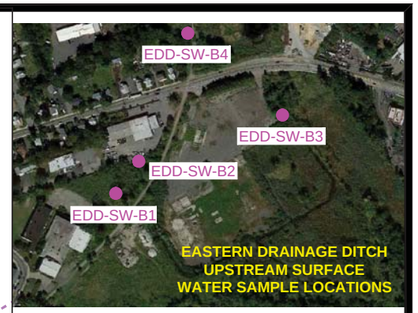
If possible, temporary pore water well point, additional surface water, and sediment sampling will be conducted concurrent with the quarterly monitoring event following agency approval of this Work Plan. To the extent practical, surface water samples from the Eastern Drainage Ditch and Rockaway River, and pore water samples from the Rockaway River will be collected in concert.

Supplemental pore water (if collected), surface water, and sediment monitoring results for the Rockaway River and the Eastern Drainage Ditch will be presented in an ecological evaluation report that is consistent with NJDEP's February 2015 *Ecological Evaluation Technical Guidance* document.

Figure 1
Proposed Eastern Drainage Ditch Background Surface Water Locations and Rockaway River Sediment and Surface Water Sampling Locations

RMT COMPUTER AIDED DESIGN AND DRAFTING





Area is assumed to be wetland per review of wetland data and aerial photographs, no JFNew delineation points or LOI data available

BLOCK 801 LOT 5.01
AIR PRODUCTS & CHEMICALS

BLOCK 801 LOT 6
NEW JERSEY
POWER AND LIGHT

BLOCK 801 LOT 5.02
STATE OF NEW JERSEY

BLOCK 801 LOT 5
WHARTON ENTERPRISES

BLOCK 801 LOT 3
L.E. CARPENTER

BUILDING 9

50 foot TRANSITION ZONE AS REQUIRED BY GP4 040001

WETLAND BOUNDARY

BEAVER DAM

SCATTERED TREES & BRUSH

ROCK

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- MW-25(R) — GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- MW-29s — PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SG-R1 — RIVER POINT SURFACE WATER ELEVATION
- SG-D1 — DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION
- GEI-2I — PIEZOMETER LOCATION
- SW-R-1 — SURFACE WATER SAMPLING LOCATION (D = DITCH; R = RIVER)
- 630 — POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
- RAILS TO TRAILS
- REGULATED WETLAND
- TRANSITION ZONE
- STATE OPEN WATERS
- COVERTED FOOT BRIDGE
- WETLAND BOUNDARY
- WETLAND TYPE BORDER
- E — ROCKAWAY RIVER SEDIMENT AND SURFACE WATER SAMPLING TRANSECT
- EDD-SW-B1 — EASTERN DRAINAGE DITCH SURFACE WATER SAMPLING LOCATION

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. WETLAND BOUNDARIES BASED ON JFNEW DELINEATION (SEPT 2004) AND LETTERS OF INTERPRETATION (LOI) (JUNE 14, 2000). 1439-00-0001.1 REFERENCES THE NEW JERSEY LANDUSE REGULATION PROGRAM FILE NUMBER.
3. ELEVATIONS FOR THE FLOOD HARZARD LINE FROM THE STATE OF NEW JERSERY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES, DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA (SHEETS B-16 and C-16).
4. INSET AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH AND IS DATED SEPTEMBER 18, 2013.

0 60' 120' 180' 240'
SCALE IN FEET

NO.	BY	DATE	REVISION	APP'D.
5.				
4.				
3.				
2.				
1.				

L.E. CARPENTER
WHARTON, NEW JERSEY

EASTERN DRAINAGE DITCH SURFACE WATER AND ROCKAWAY RIVER SEDIMENT AND SURFACE WATER SAMPLING LOCATIONS

DRAWN BY:	RWH/AMF	DRAWING SCALE:	PROJECT NO. 248642.0.0
CHECKED BY:	RWH	1"=60'	FILE NO. Transects_20160209.dwg
APPROVED BY:	KCS	DATE PRINTED:	**FIGURE 1**
DATE:	FEBRUARY 2016		

TRC
30 Patewood Drive, Suite 300
Patewood Plaza One
Greenville, SC 29615

Drawing Name: J:\CAD\LE Carpenter\Transects_20160209.dwg
Operator Name: RECKL, ADAM
Drawing Plot Scale: 1:2'
Layout: Wetlands (13)
Dwg Size: 0.80 Mb
Plot Date: April 2008
Plot Time: 10:48 AM